Alogliptin – a new DPP-4 inhibitor for type 2 diabetes

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Alogliptin (Vipidia), the latest DPP-4 inhibitor, is licensed as second-line therapy in patients with type 2 diabetes mellitus. Steve Chaplin presents the data relating to its efficacy and adverse events and Azhar Farooqi outlines its place in therapy.

Steve Chaplin

In the treatment of type 2 diabetes, the dipeptidyl peptidase-4 (DPP-4) inhibitors are recommended as second-line add-on therapy to metformin or a sulfonylurea, and as third-line add-on to metformin plus a sulfonylurea. The 2010 NICE guideline included only sitagliptin (Januvia) and vildagliptin (Galvus) but saxagliptin (Onglyza) and linagliptin (Trajenta) have since been introduced.

Alogliptin

Alogliptin (Vipidia) is a DPP-4 inhibitor available as tablets of 6.25, 12.5 and 25mg and in combination with metformin as Vipdomet (12.5/850mg and 12.5/1000mg). Vipidia is licensed for the treatment of type 2 diabetes in combination with other glucose-lowering agents including insulin. Vipdomet is licensed for use alone when metformin monotherapy is inadequate or in combination with pioglitazone or insulin.

The recommended dose of alogliptin is 25mg once daily (or 12.5mg twice daily as a component of Vipdomet). The dose of insulin or a sulfonylurea may need to be reduced when combined with alogliptin.

Safety and efficacy as triple therapy with metformin plus a sulfonylurea has not been established and there is an increased risk of hypoglycaemia with triple therapy with metformin and pioglitazone.

No dose adjustment is recommended for older people, or in patients with mild renal impairment or mild to moderate hepatic impairment. The dose should be halved in patients with moderate renal impairment and quartered in those with severe renal impairment. Alogliptin is contraindicated in patients with severe hepatic impairment.

Clinical trials

Alogliptin has been evaluated as add-on therapy to the major classes of drugs used to treat patients with type 2 diabetes (mean age 53–57, mean body mass index 30–33kg per m²) in trials lasting six months and in a two-year comparison with glipizide. It has not been compared with other DPP-4 inhibitors.

Compared with placebo as add-on therapy to metformin, a sulfonylurea, insulin (with or without metformin) and a
Alogliptin is a new DPP-4 inhibitor and the fifth agent of this class available to prescribe in the UK.

It is similar to sitagliptin, vildagliptin and saxagliptin in that it is primarily excreted via the kidneys. Linagliptin in contrast is metabolised in the liver.

Alogliptin reduces HbA1c by 0.5–0.6 per cent in patients with baseline HbA1c of 7.6–9.3 per cent. The two-year study demonstrated non-inferiority compared with glipizide (see Figure 1).

**Adverse effects**

The overall frequency of adverse events in clinical trials was similar for alogliptin and placebo but they were more likely to result in discontinuation with alogliptin (4.1 per cent) and active comparators compared to placebo, however, doses of insulin may need to be reduced as hypoglycaemia is more common when alogliptin in combination with insulin.

In terms of other precautions, alogliptin should not be used in severe hepatic impairment, and it is recommended that the dose is reduced in moderate (half the standard dose, 12.5mg) and severe (quarter dose, 6.25mg) renal failure.

While there has been no significant association with pancreatitis, caution is recommended where there is a history of this condition.

The EXAMINE study showed that alogliptin does not cause adverse CVD events (including CVD mortality and non-fatal MI and strokes) when compared to placebo. Although the study did not show a signal of increased heart failure, caution is recommended (in line with other agents in this class) in patients with severe heart failure (NYHA class III and IV).

Alogliptin is a moderately effective glucose-lowering agent similar in efficacy to other DPP-4 inhibitors. It is an option where this class is considered as an appropriate step-up option to help achieve glycaemic targets.

Its price, currently offering a saving of 16 per cent compared to other DPP-4 inhibitors, may mean it is a more cost-effective choice in type 2 diabetes in the NHS. It is reassuring that it has not been shown to have an adverse CVD profile, an important consideration in therapies for people with type 2 diabetes.

**References**


**Declaration of interests**

Steve Chaplin is a pharmacist who specialises in writing on therapeutics.

Steve Chaplin has none to declare.

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